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Remarks

Claims 1-52 were pending in the application. Claims 1-52 were rejected. No claims were merely objected to and no claims were allowed. By the foregoing amendment, no claims are canceled, claims 1, 5-8, 15, 16, 26, 35-37, 39, 40, 42, 44-51 are amended, and claims 53-59 are added. No new matter is presented.

Specification

At ¶1, a new Abstract was requested. This is presented by the foregoing amendment.

Claim Objections

At ¶2, a surplus word "or" was noted in claim 1. This has been corrected.

Claim Rejections-35 U.S.C. 112

Claims 7-11, 35 and 39 were rejected under 35 U.S.C. 112(1). Applicant respectfully traverses the rejection.

The claim 7 phrase "a means to reject" and claim 35&39 phrase "a means to correct" were asserted as having not been properly described in the specification as-filed. Claim 7 has been amended to identify an aperture. Claims 35&39 have been amended to identify a lens. The aperture is supported by element 42 at paragraph 0027 of the present Pregrant Publication. The lens is supported by elements 30 and 32 at paragraph 0024 of the Pregrant Publication. Paragraph 0024 identifies correction and one of ordinary skill in the art would read this as correction for spherical aberration.

Claims 1-47 were rejected under 35 U.S.C. 112(2). Applicant respectfully traverses the rejection.

Regarding claim 46, the term "the tool" was noted as lacking antecedent basis. By the foregoing amendment, this has been corrected to "the moving part".

It was further asserted that the phrases "generally" and "relatively" render the claims indefinite. By the foregoing amendment, the terms have been deleted.

Claim Rejections-35 U.S.C. 102

Claims 1, 2, 22, 23, 28-31, 38, and 44-52 were rejected as being anticipated by Appleyard (US6903327). Applicant respectfully traverses the rejection.

Appleyard identifies a planar light source used to detect obstructions passing through a planar region and stop machine if an obstruction is detected. Appleyard does not determine boundaries of the shadowed region.

The system of claim 1 illuminates a region around the path of the moving part of sufficient size such that obstructions in the region cast shadows of corresponding shapes within the vertical and horizontal extents of the region on the light receiving means. The shapes and positions of the shadowed regions can therefore be used to control movement of the moving part. This differs from the prior art in which discrete receivers are set up to receive light from the region such that when the light is obstructed, an immediate action such as stopping the machine is undertaken. No other suitable information is available or used by Appleyard that relates as to the areas of obstruction, that is, the existence of obstructions in other areas or of the shape of the obstructions.

For clarification, the specification and independent claims have been amended to clarify the nature of the shadowed regions as within the vertical and horizontal extents of the illuminated region. This, for example, is seen in FIG. 4. The new claims contain similar references.

The column 3 passage cited in the Office action merely identifies that the object casts a shadow that obscures the light. It does not identify determining the extents of the shadow, etc. For example, this may be verified by looking at the configuration of Appleyard as shown in its drawings and contrasting with present FIG. 4.

Claim Rejections-35 U.S.C. 103

Claims 15 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Appleyard in view of Dissey (US6444973). Applicant respectfully traverses the rejection.

The citation is purely a hindsight reconstruction. There is no sufficient explicit analysis (*e.g.*, under *Graham v. John Deere Co.*). Dissey was asserted, without support, as identifying a safety system. Office action, page 5, line 1. No safety system use was mentioned in Dissey.

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Furthermore Dissey's abstract was cited as a motivation to combine. This reads:

> A detection apparatus and method for detecting the direction to a light source. The detection apparatus comprises a strobe lamp for emitting a high intensity beam of light and a region-based detector, e.g., a quadrant light detector, for receiving a portion of the high intensity beam of light. In employing a strobe lamp, the overall accuracy and range of the detection apparatus are improved.

Appleyard does not appear to have the basic quadrant detector and associated direction detection for which the strobe is asserted as an improvement. How does the office propose to combine? What reason would cause one to have sought any change to Appleyard, let alone the particular change from Dissey?

Accordingly, Applicant submits that claims 1-59 are in condition for allowance. Please charge any fees or deficiency or credit any overpayment to our Deposit Account of record.

Respectfully submitted,

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Date: June 11, 2007

I hereby certify that this correspondence is being facsimile transmitted this 11th day of June, 2007 to the USPTO, at Fax No. 571-273-8300.

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Antoinette Sullo